REMARKS

In the Office Action, the Examiner rejected Claims 21-26, which were all of the then pending claims, under 35 U.S.C. 102 as being fully anticipated by U.S. Patent 6,178,529 (Short, et al.). The Examiner also objected to terminology used in the independent Claims 21, 25 and 26.

Applicants are herein amending Claims 21, 25 and 26 to better define the subject matters of these claims. In addition, new Claim 27, which is dependent from Claim 21, is being added to describe a preferred feature of the present invention.

These amendments address the Examiner's objection to the terminology used in Claims 21, 25 and 26. More specifically, the Examiner objected to the phrase "building a globally optimal configurations," which occurred in Claims 21, 25 and 26. In each of these claims, this phrase is herein being amended to read as "building a globally optimal configuration," which is believed to be better form.

In view of the foregoing, the Examiner is requested to reconsider and to withdraw the objections to Claims 21, 15 and 26.

Also, for the reasons discussed below, all of claims 21-27 patentably distinguish over the prior art and are allowable. The Examiner is thus asked to reconsider and to withdraw the rejection of Claims 21-26 under 35 U.S.C. 102, and to allow these claims and new Claim 27.

The present invention provides a method and system for managing a cluster of networked resources using rule-based constraints in a scalable clustering environment. Previous systems of this general type often require a large amount of human intervention; and as a result, these previous systems are expensive, prone to error, and are non-scalable beyond a certain size. One

important reason for this is that these prior art approaches consider the resources as static – that is, physical resources in a cluster of resources are considered to be static entities that are either available or not available and are managed using predetermined strategies.

The present invention is based on a different view of the network resources. With this invention, resources are considered as services whose availability and quality of service depend on the availability and the quality of service provided by one or more other services in the cluster. When viewed this way, the network resources can be represented in two dimensions or groups.

The first group captures the static or occasionally changing resources, such as the type and quality of the supporting services needed to enable its services. The second group is the dynamic state of the various services provided by the cluster. These dynamic changes are captured by events. The present invention, by separating the dynamic part (the events) from other parts (the rules), and combining these in a systematic manner only when needed, achieves a desired level of automation in the coordination and mapping of resources and services.

The Examiner, in the Office Action, encouraged Applicants to further define in the claims the manner in which the resources are separated, and Applicants have herein done that.

In particular, as presented herewith, independent Claims 21, 25 and 26 describe the feature that each of the resources of the network has an availability and a quality of service, and the availability and quality of service of the resources are determined by dependencies among the resources, user preferences, constraints on the resources, events and network policies. The independent claims 21, 25 and 26 also describe the feature that these dependencies, preferences, constraints, events and policies are separated into two groups; and in particular, into a first, rules

based group, and a second, dynamically changing, events based group. Claims 21, 25 and 26 further describe the step of, or means for, combining these first and second groups in a systematic manner only when needed to build the optimal configuration of the network resources.

It is believed that the claims now clearly describe the manner in which the resources – more specifically, the dependencies, preferences constraints and policies that determine the availability and quality of service of the resources – are separated into groups.

Moreover, it is this way in which the above-discussed factors are separated into groups, and the subsequent combining and use of these groups that distinguish the claims patentably over the prior art.

In particular, Short, et al. describes a method and system to facilitate the control and monitoring of disparate resources. With the procedure disclosed in Short, et al, a resource component is connected to a resource object for management of that object, and a resource monitor connects the resource components to a cluster service. The resource component includes a plurality of methods, and these methods are called by the resource monitor to control and monitor operation of the resource object through the resource component.

In the Office Action, the Examiner cited column 5, line 46 – column 6, line 9 of Short, et al. as disclosing separating the network resources, resource groups, cluster configurations into static and dynamically changing groups. This portion of Short, et al. discusses the operation of the resource manager 86 and how that manager makes management decisions and initiates appropriate actions, such as startup, restart and failover. Various factors may be taken into account when making these decisions, but there is no disclosure or teaching of separating the

resources and resource groups, or the factors that determine the availability and quality of services of the resources, into the two above-identified groups that are used in the practice of the present invention. Instead, with the procedure of Short, et al, the resource manager receives resource and system state information from a resource monitor and a node manager, and uses that information to make decisions.

The above-discussed feature of the present invention – that is, the way in which the resource related factors are separated into two groups and subsequently combined and used - is important because it helps to provide a high level of automation in the process of computing a globally optimal solution based on the constraints and the current state of the cluster.

The other references of record have been reviewed, and these other references, whether considered individually or in combination, also do not disclose or suggest these features of the present invention.

Because of the above-discussed differences between Claims 21, 25 and 26 and the prior art, and because of the advantages associated with these differences, these claims are not anticipated by, and are not obvious in view of, the prior art. Accordingly, Claims 21, 25 and 26 patentably distinguish over the prior art and are allowable. Claims 22–24 and 27 are dependent from, and are allowable with, Claim 21.

For the reasons set forth above, the Examiner is asked to reconsider and to withdraw the objection to the language of Claims 21, 22, 25 and 26 and the rejection of Claims 21-26 under 35 U.S.C. 102, and to allow Claims 21-27. If the Examiner believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully Submitted,

John S. Sensny

John S. Sensny
Registration No. 28,757
Attorney for Applicants

Scully, Scott, Murphy & Presser, P.C.
400 Garden City Plaza – Suite 300
Garden City, New York 11530
(516) 742-4343

JSS:jy